

100

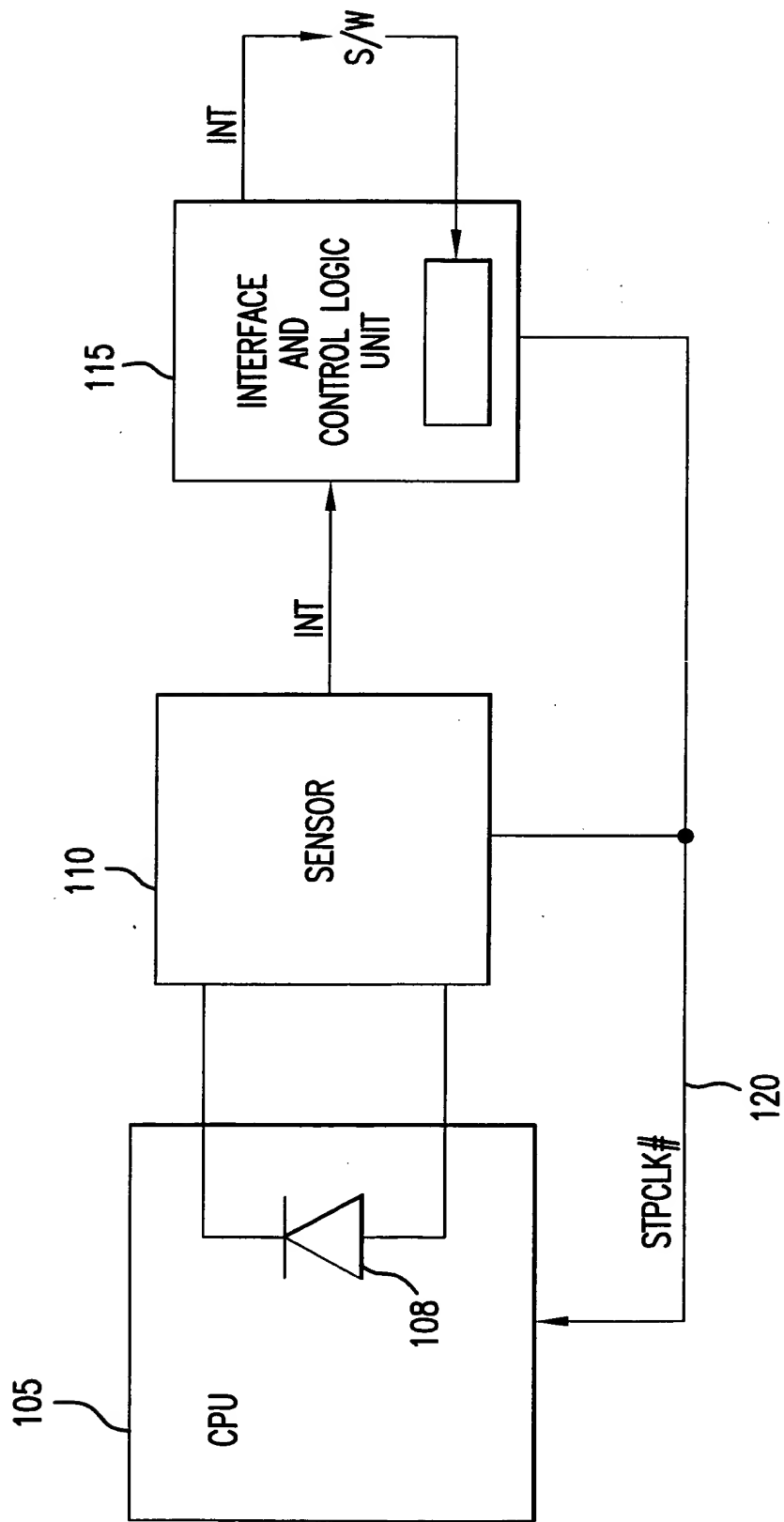


FIG.1

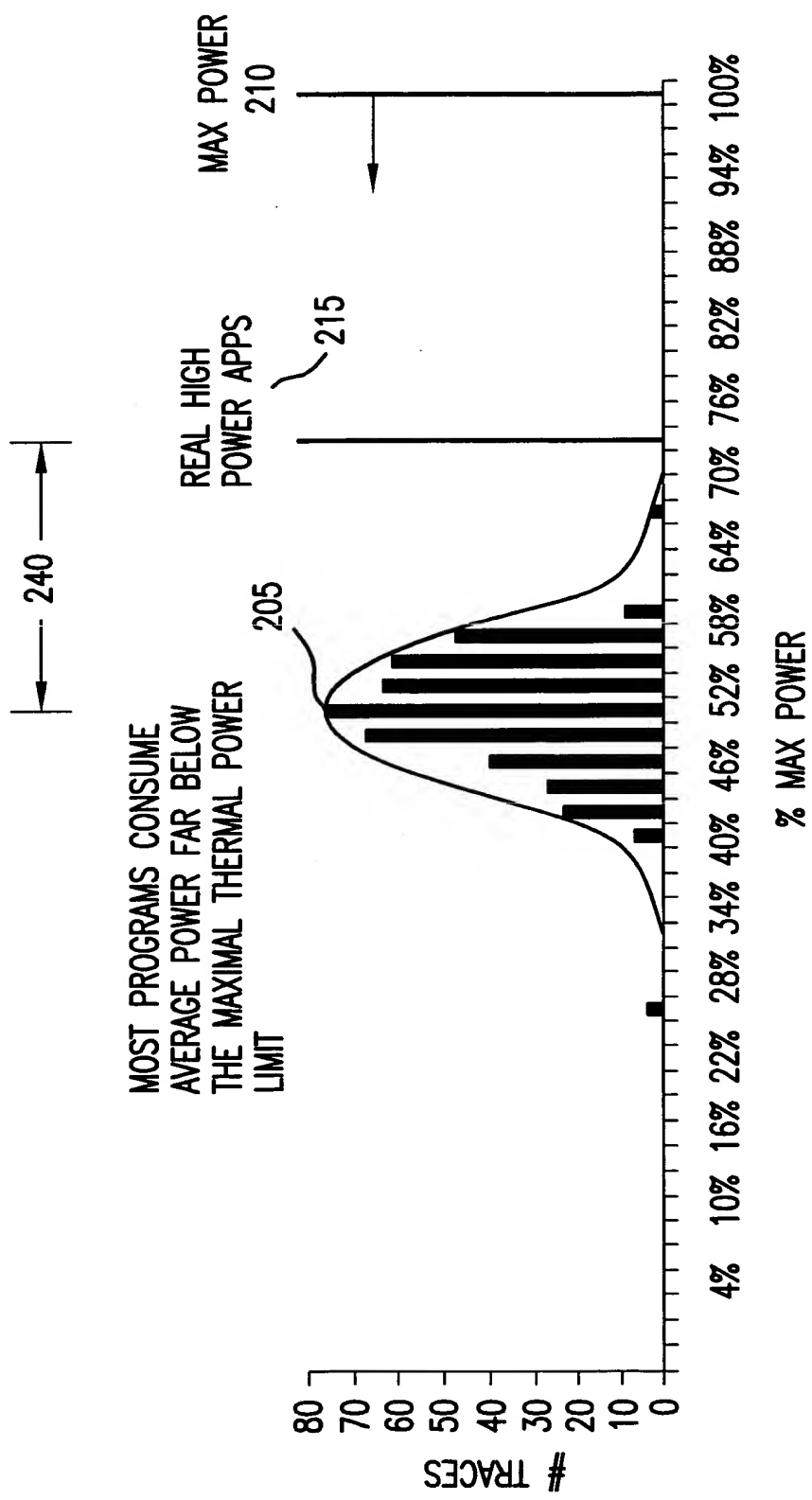


FIG.2

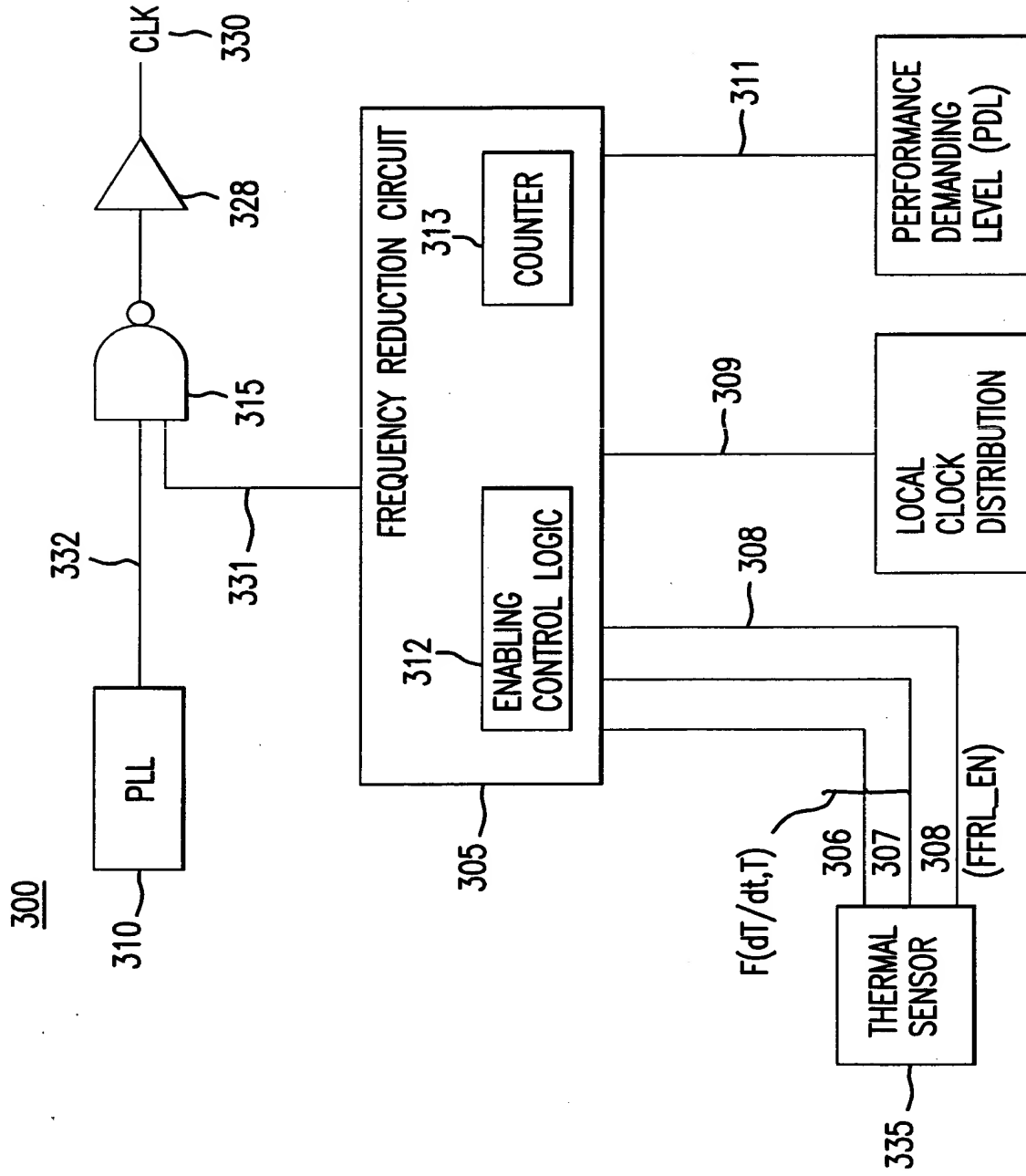


FIG.3

400

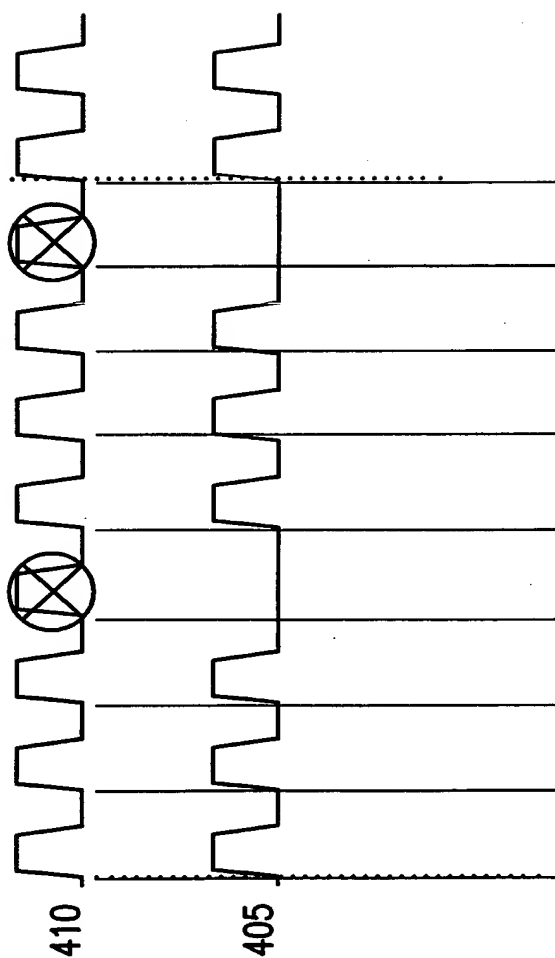


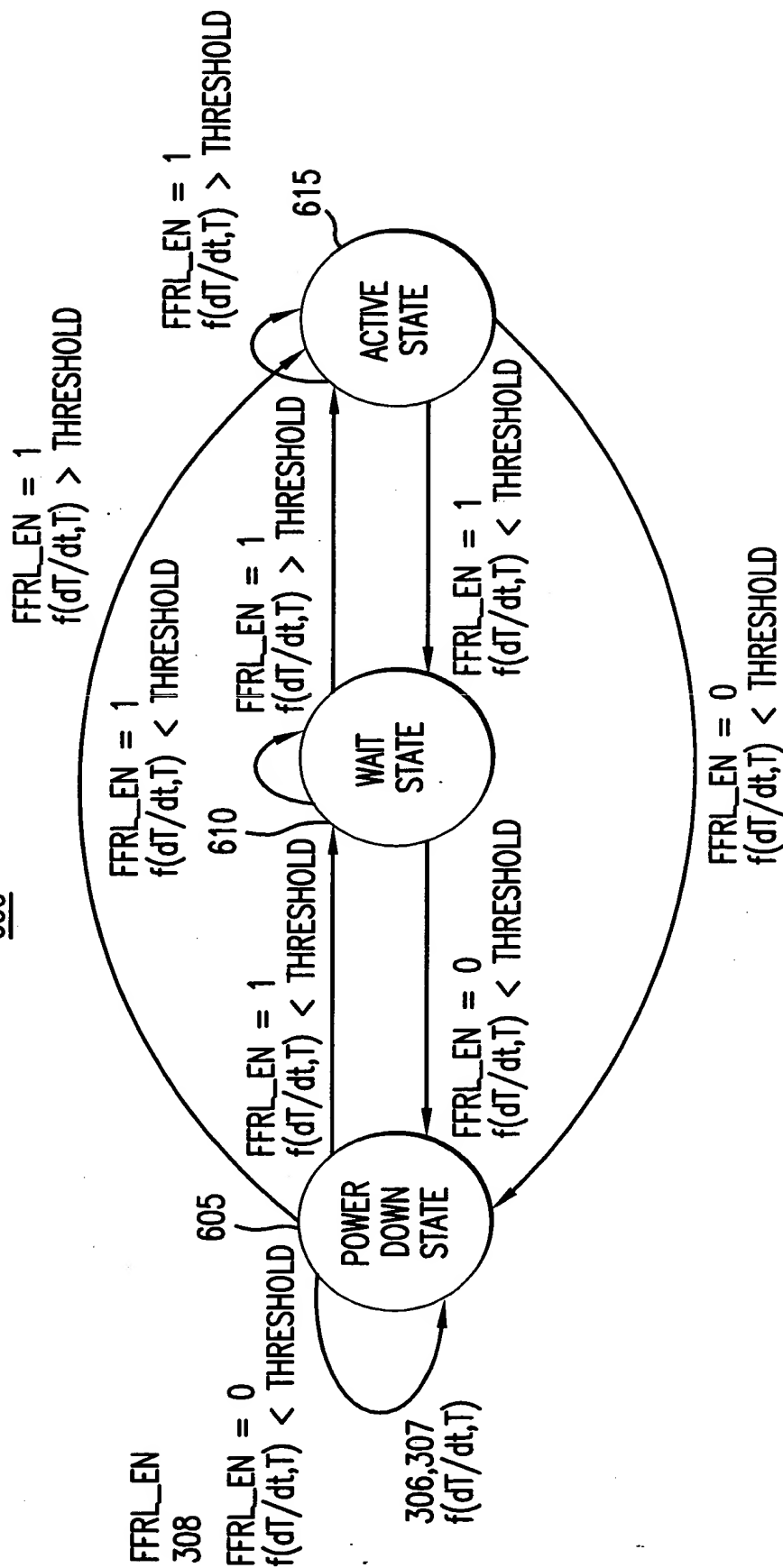
FIG. 4

FFRL_EN	dT/dt	THERMAL TEMPERATURE	CURRENT LOGIC STATE	PREV. LOGIC STATE
0 (NOT NEAR MAXIMAL THERMAL LIMIT)	NOT CARE	NOT CARE	POWER DOWN	POWER DOWN
0 (NOT NEAR MAXIMAL THERMAL LIMIT)	NOT CARE	NOT CARE	POWER DOWN	WAIT
0 (NOT NEAR MAXIMAL THERMAL LIMIT)	NOT CARE	NOT CARE	POWER DOWN	ACTIVE
1 (NEAR MAXIMAL THERMAL LIMIT)	<0.2 (SLOW RATE)	<MAX. TEMPERATURE- δt	POWER DOWN	POWER DOWN
1 (NEAR MAXIMAL THERMAL LIMIT)	>0.2 (SLOW RATE)	<MAX. TEMPERATURE- δt	WAIT	POWER DOWN
1 (NEAR MAXIMAL THERMAL LIMIT)	<0.2 (SLOW RATE)	<MAX. TEMPERATURE- δt	POWER DOWN	WAIT
1 (NEAR MAXIMAL THERMAL LIMIT)	>0.2 (SLOW RATE)	<MAX. TEMPERATURE- δt	WAIT	WAIT
1 (NEAR MAXIMAL THERMAL LIMIT)	NOT CARE	>MAX. TEMPERATURE- δt	ACTIVE	POWER DOWN
1 (NEAR MAXIMAL THERMAL LIMIT)	NOT CARE	>MAX. TEMPERATURE- δt	ACTIVE	WAIT
1 (NEAR MAXIMAL THERMAL LIMIT)	NOT CARE	>MAX. TEMPERATURE- δt	ACTIVE	ACTIVE

FIG.5

LOGIC STATES DIAGRAM OF FAST FREQUENCY REDUCTION LOGIC (FFRL)

600



FFRL_EN: FAST FREQUENCY REDUCTION LOGIC ENABLE SIGNAL; THRESHOLD: LOGIC STATE TRANSITION THRESHOLD;
dT/dt: TEMPERATURE CHANGING RATE; T: THERMAL TEMPERATURE; f(dT/dt, T): FUNCTION OF dT/dt AND T

FIG.6